Abstract

A production method for polypyridinium having a narrow molecular weight distribution and a desired molecular weight is provided. Polypyridinium 3 having a narrow molecular weight distribution and a desired molecular weight is synthesized by allowing a pyridine derivative monomer 2 to polymerize on a polymerization initiator 1 such as a specially designed 4-halopyridinium and the like in the presence of a dissolution accelerating agent, such as tetrabutyl ammonium tetrafluoroborate, that dissolves the polymer formed in a solvent as in the chemical below.

[Chemical Equation 4]

$$R-N \xrightarrow{Y} X + \circ N \xrightarrow{Z} Z \longrightarrow R-N \xrightarrow{Z} X \xrightarrow{Z} X$$

where Y represents an anion that dissolves in an organic solvent, X and Z represent halogen atoms, R represents hydrocarbon groups and the like and o is about 1 to 300.

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